

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for activating a surface of a metal member, which comprises heating a mixed gas of a carbon donor compound and ammonia to at least 300°C in a heating furnace to form HCN under catalytic action of at least one of said metal member, a metal-made inner wall of said furnace and a metal-made jig in the thus-heated mixed gas, and causing the thus-formed HCN to act on said surface of said metal member,

wherein said carbon donor compound is selected from the group consisting of acetylene and ethylene and wherein a ratio of a flow rate of ammonia to a flow rate of carbon donor compound into said heating furnace is 1:0.0001 to 1:0.1.

2. (Cancelled)

3. (Previously Presented) A method according to claim 1, wherein said metal-made inner wall of said heating furnace or said metal-made jig comprises at least one metal selected from Fe, Ni, Co, Cu, Cr, Mo, Nb, V, Ti and Zr.

4. (Original) A method according to claim 1, wherein HCN is formed to at least 100 mg/m³ in said heating furnace and a furnace atmosphere gas has a dew point not higher than 5°C.

5. (Previously Presented) A method according to claim 1, wherein said carbon donor compound is acetylene.

6. (Previously Presented) A method according to claim 1, wherein said carbon donor compound is ethylene.

7. (Previously Presented) A method according to claim 1, wherein said HCN is formed under catalytic action of said metal member.

8. (Previously Presented) A method according to claim 1, wherein said HCN is formed under catalytic action of said metal-made inner wall of said furnace.

9. (Previously Presented) A method according to claim 1, wherein said HCN is formed under catalytic action of said metal-made jig.

10. (Previously Presented) A method according to claim 1, wherein said inner wall of said furnace is not made of metal.

11. (Previously Presented) A method according to claim 7, wherein said inner wall of said furnace is not made of metal.

12. (Previously Presented) A method according to claim 1, wherein said HCN is formed in said heating furnace in a concentration of from 100 to 30,000 mg/m³.

13. (Previously Presented) A method according to claim 1, wherein said inner wall of said furnace is made of metal.

14. (Previously Presented) A method according to claim 7, wherein said inner wall of said furnace is made of metal and wherein said HCN is also formed under catalytic action of said wall of said furnace.

15. (Previously Presented) A method according to claim 1, wherein after causing the thus-formed HCN to act on said surface of said metal member said method further comprises nitriding or carburizing the metal member.

16. (Previously Presented) A method according to claim 1, wherein a percentage of ammonia in the mixed gas is about 50% by volume.

17. (Cancelled)